

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Traffic & Safety Section

222 South 6th Street, Room 100
Grand Junction, Colorado 81501
(970) 683-6287 Fax: 970-683-6290



Date: October 12, 2010
To: City/County Transportation Officials
From: Alisa Babler
Permit Unit Engineer
**Subject: CDOT Region 3 Intersection Analysis and Prioritization
Request for Applications**

CDOT Region 3 Traffic and Safety (CDOT) has commissioned Fehr and Peers to complete the Intersection Analysis and Prioritization Study. The intent of this study is to update the study done in 2007, develop a methodology, and prioritize intersection improvements for the use of the TPR and CDOT in a multi-year funding program. Up to three intersections per county will be analyzed in-depth and ranked, to assist in developing priorities for CDOT and the TPR. The study will analyze the intersections, identifying long and short term improvements to address deficiencies, and recommend prioritization for future funding.

At this time we are requesting intersection applications for the study. Intersections for consideration should have safety or operational issues and be located on the state highway system. We are requesting that counties submit up to three intersections for inclusion in the study. Additionally, please provide the application packet to cities within your respective county for additional submittals by the city if desired. All intersections submitted will be compiled and an initial evaluation done to establish the top three intersections in the county for an in-depth analysis and inclusion in the study. Intersections not included in the in-depth analysis will be provided as a list in the appendix for future reference.

Any supporting data and documentation available, as it relates to the intersection, will be useful in determining applicable improvements and the final priority of the intersection. The application should include as many specifics as possible regarding deficiencies of the intersection, time of day, impacts of weather, geometric constraints, right of way constraints, crash history, and any other site specific information available.

Please provide your applications no later than **December 15, 2010**. Completed applications should be sent to:

Emily Gloeckner, P.E.
Fehr & Peers Transportation Consultants
621 17th Street, Ste. 2301
Denver, CO 80293
E.Gloeckner@fehrandpeers.com

Phone: 303-296-4300
Fax: 303-296-4302

Thank you for assisting us in the development of this program. Should you have any questions, please feel free to contact the CDOT project manager, Alisa Babler at 970-683-6271 or the Fehr & Peers project manager, Emily Gloeckner, at 303-296-4300.

Region 3 Intersection Analysis and Prioritization
Intersection Application

Requesting Agency

Agency Name	Routt County
Contact Person	Heather McLaughlin
Title	Senior Engineer
Email	hmclaughlin@co.routt.co.us
Phone Number	970.879.0537
Mailing Address	136 6th Street, Box 773598 Steamboat Springs, CO 80477-3598

Intersection Location

Highway (example, US 50)	US40		
Highway Milepost	128.33		
Local Cross Street name	CR 42		
Is the Cross Street (check one)	Public ROW <input checked="" type="checkbox"/>	Private Drive <input type="checkbox"/>	Other <input type="checkbox"/>

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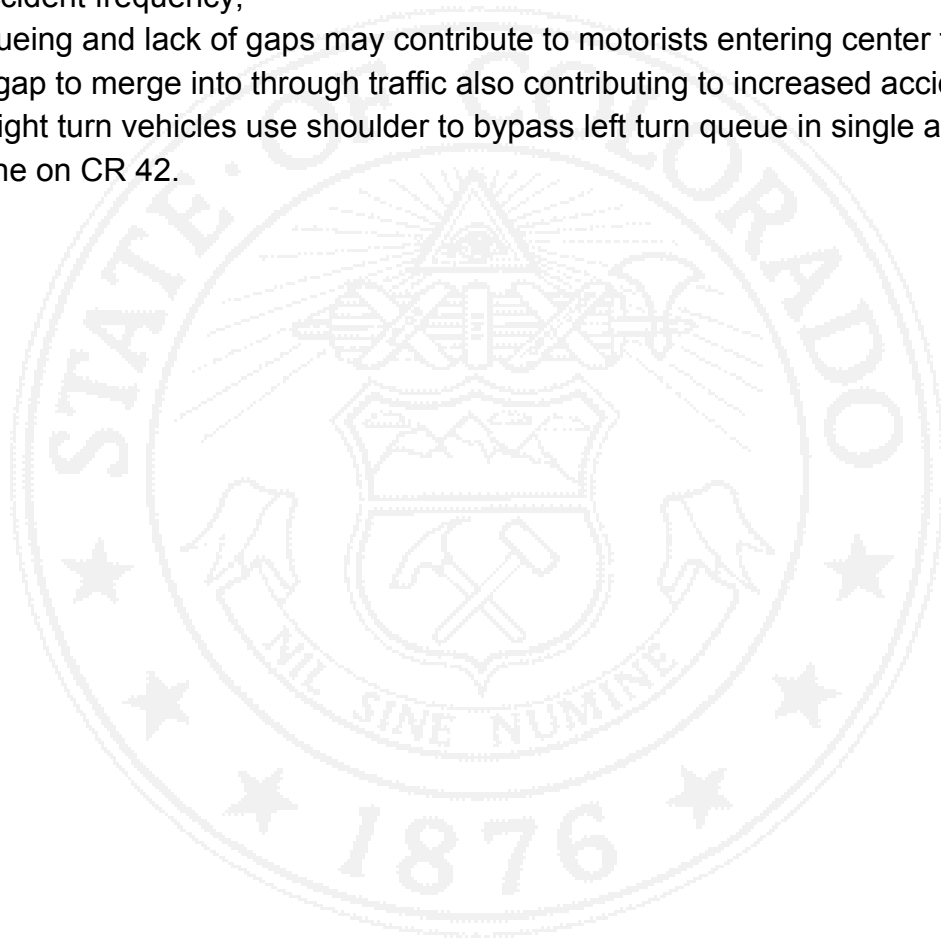
Intersection Information

Type of Intersection (check one)	Signal	Minor St Stop X	All Way Stop	Other:
Nearby Driveways	Yes: there is a private access north of US 40 Distance between intersections: 160 ft north			No
Traffic Mix (check all that apply)	Trucks x	Pedestrians x	Bicycles x	Other: x Transit
Intersection Issues	Please describe the types of safety or operational issues at the intersection.			
<p>Safety Issues:</p> <p>sight distance</p> <p>crash frequency</p>	<p>the existing embankment north of US 40 in conjunction with right turning vehicles blocks the sight of oncoming US 40 westbound vehicles for southbound CR 42 motorists turning left onto US 40 (150/47 Left turns am/pm)</p> <p>per the Needs Study, the crash frequency and severity exceeds statewide averages for similar locations</p>			
<p>Operational Issues:</p> <p>AM peak hour delays</p>	<p>with no signal, there are delays for motorists turning left in the AM peak hour that can't enter US 40 due to lack of gaps in through traffic; additionally with one outbound lane, any right turning motorists are delayed</p>			

Intersection Deficiencies

Please provide a brief description of the existing intersection deficiencies and associated safety concerns, including time of the concerns (day of the week/hour(s)/seasons/time/weekday/weekend/holiday/etc):

- sight distance restrictions impede ability for southbound motorists on CR 42 from seeing westbound thru traffic on US 40; it is believed this contributes to the increased accident frequency;
- queing and lack of gaps may contribute to motorists entering center turn lane without a gap to merge into through traffic also contributing to increased accident frequency;
- right turn vehicles use shoulder to bypass left turn queue in single approach lane on CR 42.



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Mitigation

Please provide a brief description of possible mitigations, improvements, and/or projects to mitigate the safety concerns at the intersection:

A NEPA study has been approved for US 40 including the CR 42 intersection. Refer to the NEPA study for long-term mitigation measures. In the short - term the Needs study suggests construction of an exclusive southbound left-turn lane on CR 42 and recommends an engineering study. The 2008 Safety Assessment report by CDOT recommended laying back the embankment to provide additional sight distance on US 40 east of CR 42 along with advance intersection warning signs to improve sight distance.

Are there any existing plans for improvements for this intersection? Yes/No. If yes, please explain:

Yes - the NEPA study for US 40 approved August 2010 includes this intersection.

Are any additional funding sources available for this project: Yes/No. If yes, please explain:

None identified.

Does this intersection have impacts to adjacent intersections, roadways, etc? If yes, please explain:

None identified.

Additional Information

To assist in analyzing the intersection please attach the following information if available/applicable:

- Accident data, including police reports if available -see Studies
- Traffic Volumes, such as AADT/ADT, peak hour volumes, peak hour turning movement counts-see Studies
- Traffic Studies -see below
- Pedestrian Counts - none available
- Bicycle Counts - none available
- Existing signal timing or Synchro files -can be provided
- Existing construction plans -none available
- Survey data - none available
- Aerial photos -attached
- Photographs of the intersection -can be provided
- Right of Way maps *Studies
- Any other data/documentation to assist in analyzing the intersection

-See West Steamboat Springs US Highway 40 System Needs Study
and Technical Appendix August 2008 by Stolfus Associates

-See West of Steamboat Springs US Highway 40 NEPA Study, August 2010
by Jacobs

- See US 40 Highway NEPA Study - West of Steamboat Springs Traffic
Technical Memo DRAFT, October 2009 by Jacobs

- 2008 Safety Assessment Report for West US 40 NEPA Study, October 2008
by CDOT

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Region 3 Intersection Analysis and Prioritization
Intersection Application

Requesting Agency

Agency Name	City of Steamboat Springs
Contact Person	Janet Hruby
Title	City Engineer
Email	jhruby@steamboatsprings.net
Phone Number	970.871.8245
Mailing Address	P.O. Box 775088 137 10th Street Steamboat Springs, CO 80477-5088

Intersection Location

Highway (example, US 50)	US40		
Highway Milepost	130.22		
Local Cross Street name	Downhill Drive / Riverside		
Is the Cross Street (check one)	Public ROW <input checked="" type="checkbox"/>	Private Drive <input type="checkbox"/>	Other <input type="checkbox"/>

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Intersection Information

Type of Intersection (check one)	Signal	Minor St Stop X	All Way Stop	Other:
Nearby Driveways	Yes: driveways within 300 ft to east Distance between intersections: 200 ft to private access 300 ft to private road/ access			No
Traffic Mix (check all that apply)	Trucks x	Pedestrians x	Bicycles x	Other: x Transit
Intersection Issues	Please describe the types of safety or operational issues at the intersection.			
<p>Safety Issues:</p> <p>pedestrian access</p> <p>access onto us 40</p> <p>bicycle access</p> <p>accidents</p>	<p>peders cross from residential area north of US 40 to access bus stop with no crosswalk or traffic control</p> <p>without traffic control can be difficult to turn left to access US 40 during peak periods</p> <p>intersection of downhill drive is narrow and bikes must share travel lanes on Downhill drive</p> <p>per the Needs Study, the crash frequency exceeds the statewide average</p>			
<p>Operational Issues:</p> <p>downhill drive</p> <p>alignment</p> <p>level of service</p>	<p>downhill drive accesses industrial area; lane widths are narrow and inbound trucks cross into outbound left turn lane</p> <p>intersections are offset by approx 100 ft</p> <p>per the Needs Study the LOS is F/D (am/pm) due to the lack of a signal</p>			

Intersection Deficiencies

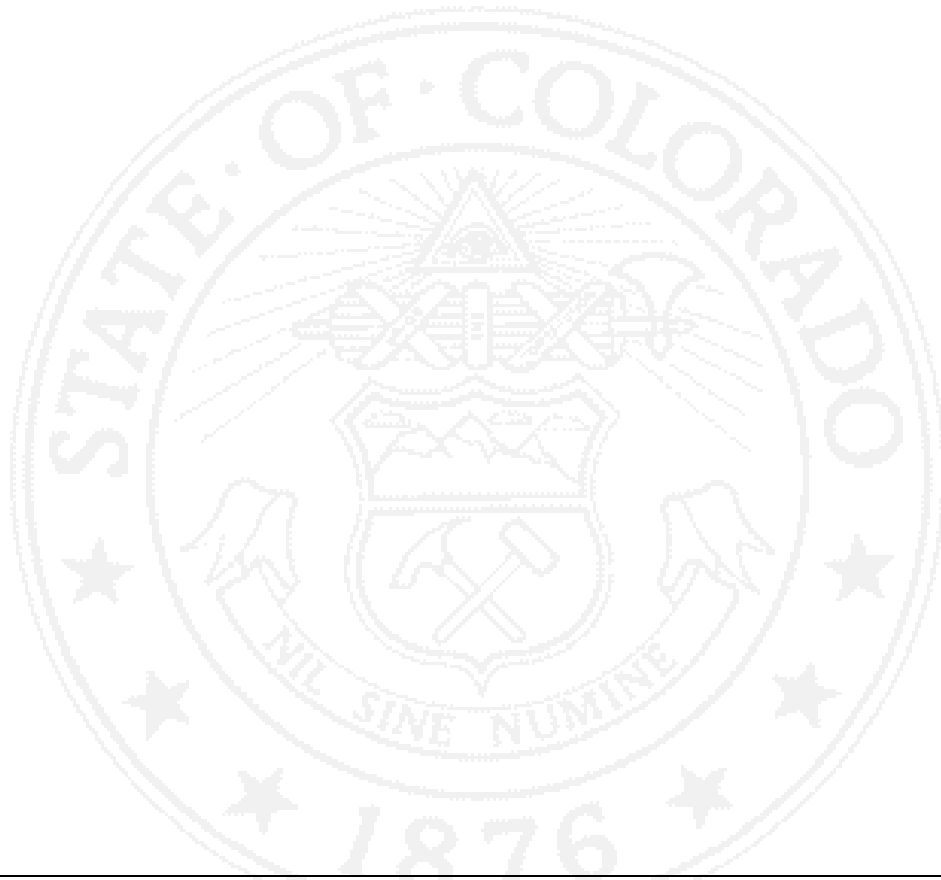
Please provide a brief description of the existing intersection deficiencies and associated safety concerns, including time of the concerns (day of the week/hour(s)/seasons/time/weekday/weekend/holiday/etc):

- it is difficult to make left turns from Downhill Drive to US 40 without a signal; this is problematic during the AM peak hour when the left turn volume is higher (approx 100 vph)
- there is no sidewalks or cross walks for pedestrians to access the bus stop on the south side of US 40; also no traffic control for pedestrians
- the lanes on downhill drive are narrow
- there is no auxiliary right turn lane from US 40 onto downhill drive
- there is currently no bike lane on Downhill drive (one is planned in the future)
- the bus stop is mostly out of the travel lane, but the location blocks visibility from Riverside Drive
- as a result of these items there are concerns for vehicular and pedestrian safety while entering/exiting Downhill drive

Mitigation

Please provide a brief description of possible mitigations, improvements, and/or projects to mitigate the safety concerns at the intersection:

A NEPA study has been approved for US 40 including the Downhill Drive intersection. Refer to the NEPA study for mitigation measures. In addition to the US40 NEPA improvements, bike lanes/4 ft shoulder is planned on Downhill Drive to serve bike traffic on this collector roadway between US 40 and Elk River road.



Are there any existing plans for improvements for this intersection? Yes/No. If yes, please explain:

Yes - the NEPA study for US 40 approved August 2010 includes this intersection.

Are any additional funding sources available for this project: Yes/No. If yes, please explain:

None have been identified

Does this intersection have impacts to adjacent intersections, roadways, etc? If yes, please explain:

None identified

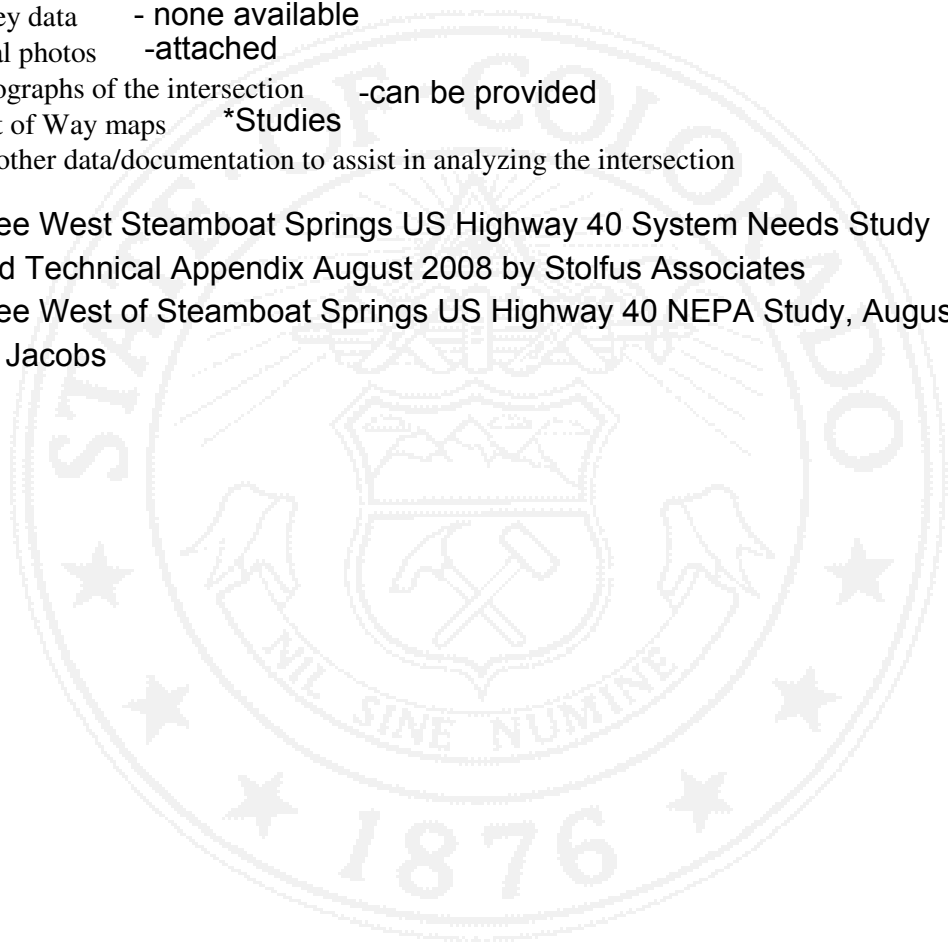
Additional Information

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- Traffic Studies -see below
- Pedestrian Counts - none available
- Bicycle Counts - none available
- Existing signal timing or Synchro files -can be provided
- Existing construction plans -none available
- Survey data - none available
- Aerial photos -attached
- Photographs of the intersection -can be provided
- Right of Way maps *Studies
- Any other data/documentation to assist in analyzing the intersection

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and Technical Appendix August 2008 by Stolfus Associates

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Agency Name	City of Steamboat Springs
Contact Person	Janet Hruby
Title	City Engineer
Email	jhruby@steamboatsprings.net
Phone Number	970.871.8245
Mailing Address	P.O. Box 775088 137 10th Street Steamboat Springs, CO 80477-5088

Intersection Location

Highway (example, US 50)	US40		
Highway Milepost	130.64		
Local Cross Street name	CR 129 (Elk River Road)/ Shields Drive		
Is the Cross Street (check one)	Public ROW <input checked="" type="checkbox"/>	Private Drive <input type="checkbox"/>	Other <input type="checkbox"/>

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Traffic & Safety Section

Intersection Information

Type of Intersection (check one)	Signal <input checked="" type="checkbox"/>	Minor St Stop	All Way Stop	Other:
Nearby Driveways	Yes: driveways within 200 ft to north Distance between intersections: 200 ft to private access to north 300 ft to private access to east			No
Traffic Mix (check all that apply)	Trucks <input checked="" type="checkbox"/>	Pedestrians <input checked="" type="checkbox"/>	Bicycles <input checked="" type="checkbox"/>	Other: <input checked="" type="checkbox"/> Transit
Intersection Issues	Please describe the types of safety or operational issues at the intersection.			
Safety Issues: pedestrian access bicycle crossings	pedestrians have a long distance to cross and no sidewalks on the north side; island refuges are not adequate; and timing is minimally adequate for crossing. there is no bike lane on US 40 or CR 129; there is no bike detection to trigger the signal for crossing			
Operational Issues: split phase signal queing level of service	Based on the existing geometry of the side streets; split phasing is required to safely accommodate movements during the peak hours queuing blocks accesses north of the intersection per the Needs Study the LOS was D/C but with the more recent NEPA Technical memo the LOS was F/F			

Intersection Deficiencies

Please provide a brief description of the existing intersection deficiencies and associated safety concerns, including time of the concerns (day of the week/hour(s)/seasons/time/weekday/weekend/holiday/etc):

- The split phasing is inefficient and during the AM/PM peak hours there are very long queues on CR 129 (up to 1,000 ft blocking the TIC driveway) as well as moderate queues to the east and West on US 40.
- there is no sidewalks or cross walks for pedestrians to access from the core trail south of US 40 to the businesses north of US 40; this is not a ped friendly intersection
- the lanes on Shield Drive are narrow due to the existing island configuration which can pose conflicts for vehicles turning left from US 40
- there is currently no bike lane on CR 129 (one is planned in the future) and this area serves as a connection between the core trail and businesses north of US 40 for commuters as well as a heavily traveled recreational cycling route
- bicyclists dont trigger the signal and it is impractical to push the existing ped buttons; therefore it is difficult for cyclists to cross the intersection when there is no side street traffic to trigger the signal
- as a result of these items there are significant concerns for bicycle and pedestrian safety while crossing US 40 from our major trail connector to area businesses
- in addition the queuing and inefficient intersection operations create vehicle safety concerns

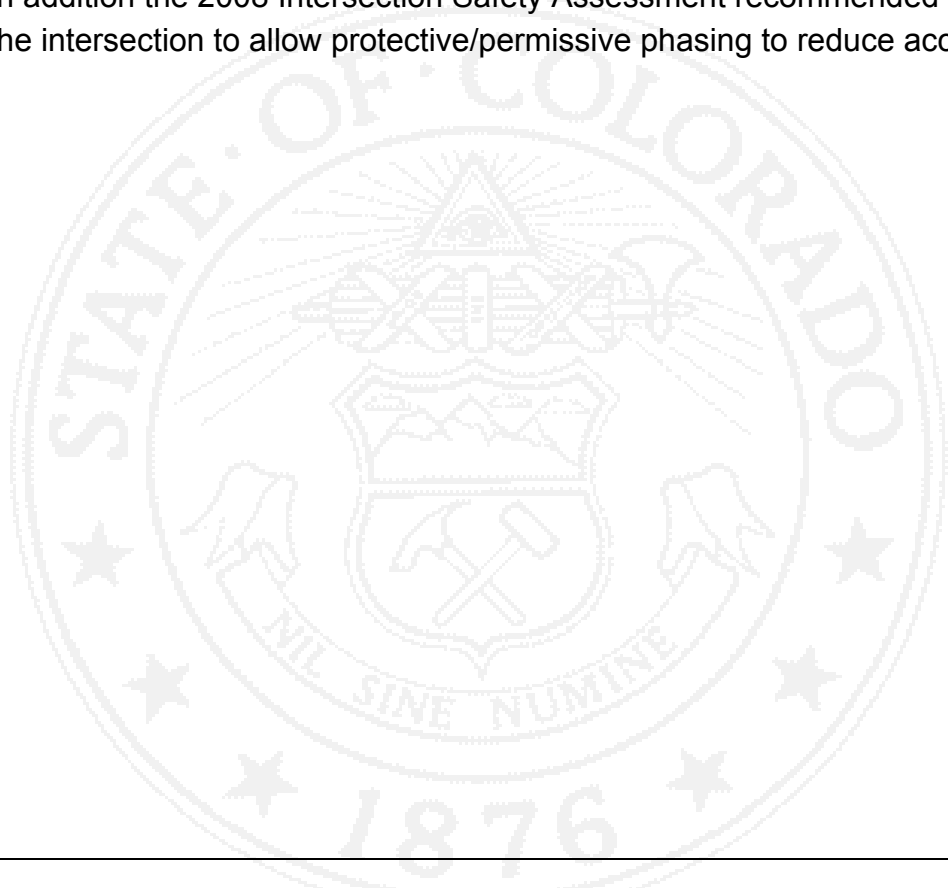
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Mitigation

Please provide a brief description of possible mitigations, improvements, and/or projects to mitigate the safety concerns at the intersection:

A NEPA study has been approved for US 40 including the CR 129 intersection. Refer to the NEPA study for mitigation measures. In addition to the US40 NEPA improvements, bike lanes/4 ft shoulder is planned on CR 129 to serve bike traffic on this collector roadway between US 40 and the Airport. In addition the 2008 Intersection Safety Assessment recommended reconfiguring the intersection to allow protective/permissive phasing to reduce accidents



Are there any existing plans for improvements for this intersection? Yes/No. If yes, please explain:

Yes - the NEPA study for US 40 approved August 2010 includes this intersection.

Are any additional funding sources available for this project: Yes/No. If yes, please explain:

Yes, the City has collected \$70,000 in developer contributions toward improving this intersection.

Does this intersection have impacts to adjacent intersections, roadways, etc? If yes, please explain:

Queuing at this intersection blocks adjacent access points to Kamar plaza/ Elk River Plaza, the CDOT maintenance facility, and the TIC office access.

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Additional Information

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- Traffic Volumes, such as AADT/ADT, peak hour volumes, peak hour turning movement counts-see Studies
- Traffic Studies -see below
- Pedestrian Counts - none available
- Bicycle Counts - see info from new CDOT bike counter !!
- Existing signal timing or Synchro files -can be provided
- Existing construction plans -none available
- Survey data - none available
- Aerial photos -attached
- Photographs of the intersection -can be provided
- Right of Way maps *Studies
- Any other data/documentation to assist in analyzing the intersection

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